



BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Subsidiary Diploma in Applied Science Pearson BTEC International Level 3 Foundation Diploma in Applied Science Pearson BTEC International Level 3 Diploma in Applied Science Pearson BTEC International Level 3 Diploma in Biomedical Science Pearson BTEC International Level 3 Extended Diploma in Applied Science Pearson BTEC International Level 3 Extended Diploma in Biomedical Science Pearson BTEC International Level 3 Extended Diploma in Environmental Science
Unit number and title	Unit 11: Functional Physiology of Human Body Systems
Learning aim(s)	A: Explore the physiology of the digestive system and the use of corrective treatments for dietary related diseases
Assignment title	Nutrition and Health
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	Following recent Government advice, the management team of your school are convinced that a healthy, nutritious diet will improve the overall well-being of their students which consequently, will have a positive impact on attendance and academic achievement. A well balanced diet, coupled with a healthy digestive system, ensures that the human body receives all the nutrients it requires to function effectively. Doctors need to evaluate any disease process that alters the biological functioning of the digestive system, whether caused by internal or external mechanisms, and ascertain how this may lead to nutritional deficiency. As part of your science studies, you are required to provide materials designed to raise awareness of dietary related diseases. Produce a report and PowerPoint presentation that provide clear guidance on the anatomy and physiology of the digestive system, sources and uses of various important nutrients and associated symptoms of nutrient deficiency linked to the consequences of, and treatments for, dietary related diseases.
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Task	In order to demonstrate the importance of a well-balanced diet and the sources of essential nutrients, you must: Produce a written report evaluating, explaining and comparing how a named dietary-related disorder affects the normal functioning of the digestive system. Explain how the dietary-related disease leads to nutritional deficiency and loss of good general health. Evaluate the use and impact of medical treatments and interventions to treat the named disease. (e.g. Lifestyle/dietary
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	changes, surgery to treat Crohn's Disease or Diverticulitis; or medication used to treat Colitis or Inflammatory Bowel Disease). • Provide evidence that you have correctly carried out a series of practical analytical tests and investigations to establish the nutritional content of a wide variety of foods. These must include sources of: - o starch (Iodine test) - o protein (Biuret test) - o lipids (Emulsion test) - o reducing sugars (Benedict's test) - o non-reducing sugars (Hydrolysis then Benedict's Test) - o vitamin C (2, 6-dichlorophenolindophenol (DCPIP) test) Provide information about the importance of these key nutrients for a balanced diet. • Produce a detailed description of the signs and symptoms that may occur in individuals suffering from nutritional deficiency caused by dietary related diseases. Explain how nutrient deficiency for TWO nutrient deficiency conditions may be treated in order to relieve the symptoms. • Your presentation/report must include a labelled diagram/photographs showing the location of organs involved in digestion. Explain the role of each of the digestive and associated organs (liver, pancreas and gall bladder.) Include any enzymes secreted by the named organs and the location of their action. Explain the normal physiological processes of digestion, absorption and the assimilation of nutrients. • Analyse the actions of amylase, protease and lipase enzymes in the chemical digestion of macronutrients in foods. Include detail of hydrolysis in the catabolic processes involved in breaking down large food molecules into their monomers. Conclude your report with a section analysing the pathways and mechanisms by which the products of chemical digestion are absorbed. Correct scientific terminology must be used and sources must be referenced.
Checklist of evidence required	A report containing: • A section that evaluates the effect on human health of dietary disease and the treatments used to correct them. • A section that describes the symptoms of nutritional deficiency resulting from dietary related disease and explains the uses of corrective treatments. • A section that analyses the role of digestive enzymes in nutrient uptake and explains the role and location of digestive organs. • A PowerPoint presentation showing evidence resulting from carrying out practical investigations into the nutrient content of a range of foods.



Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria, you must show that you are able to:
A.D1	Evaluate the effect of dietary disease and corrective treatment(s) on human health.
A.M1	Analyse the role of digestive enzymes on each part of the digestive system.
A.M2	Explain the use of corrective treatment(s) for nutrient deficiency
A.P1	Explain the role and location of organs involved in digestion
A.P2	Correctly carry out investigations to establish sources and importance of key nutrients for a balanced diet.
A.P3	Describe the symptoms of nutrient deficiency as a result of dietary-related disease
Sources of information to support you with this Assignment	http://www.nhs.uk/conditions/vitamins-minerals/pages/vitamins-minerals.aspx http://www.nhs.uk/Conditions/Malnutrition/Pages/introduction.aspx http://science.nationalgeographic.com/science/health-and-human-body/human-body/digestive-system-article/ http://www.innerbody.com/image/digeov.html
Other assessment materials attached to this Assignment Brief	e.g. work sheets, risk assessments, case study